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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,750	03/15/2001	Huy Thanh Vo	303.723US1	4340
21186	7590	10/19/2004	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			MAI, SON LUU	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/808,750	VO, HUY THANH	
	Examiner	Art Unit	
	Son L. Mai	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 and 45-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 and 45-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08-27-04 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 8-14, 15-18, 26-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Cowles (U.S. Patent 5,940,315).

Regarding claim 1, Cowles discloses a memory array (figure 2A), comprising: a number of memory cells (not shown) having a first source/drain region and a second source/drain region and a gate region; a number of source lines (not shown) coupled to the first source/drain region of at least one memory cell; a number of bit lines (not shown) coupled to the second source/drain region of at least one a number of wordlines (30-33) coupled to the gate region of at least one memory cell; a strapping line (112) of lower resistance than the wordlines coupled to a single continuous wordline (31) in a

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single array (memory bank 100) wherein the strapping line bypasses only a portion in a middle region between a first and second end of the single continuous wordline, and wherein the strapping line is spaced apart from adjacent conductive structures by a distance greater than a wordline pitch (figure 2B shows that distance between strapping lines 112 and 113 is greater than a wordline pitch between wordlines 31 and 32); and at least two channels (at node 150 in figure 2A) connecting the strapping line to a first and second end of the portion of the single wordline.

Regarding claim 2, Cowles also teaches that the strapping line comprises metal (column 4, first paragraph).

Regarding claim 3, Cowles also teaches the strapping line metal comprises a refractory metal (column 4, first paragraph).

Regarding claim 4, Cowles teaches that the portion of the wordline bypassed by the strapping line comprises a first half of the memory cells coupled to the wordline (two middle memory arrays in figure 2A are considered as a first half of the memory cells).

Regarding claims 8-14, 15-18, 26-29, since the claims recite similar limitations as in claims 1-4, they are rejected on the same ground.

4. Claims 5-7, 19-25, 30-36, 37-41, 45-48, and 49-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Cowles (U.S. Patent 5,940,315).

Regarding claim 5, Cowles discloses a memory array (figures 2A, 2B) comprising: a number of memory cells (not shown) having a first source/drain region and a second source/drain region and a gate region; a number of source lines (not

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shown) coupled to the first source/drain region of at least one memory cell; a number of bit lines (not shown) coupled to the second source/drain region of at least one memory cell; a number of wordlines (30-33 in figure 2A) coupled to the gate region of at least one memory cell; a plurality of separate strapping lines (110-113) of lower resistance than the wordlines coupled to at least one of the number of wordlines (wordline 31) in a single array (memory block 100) wherein the strapping lines bypass a plurality of separate portions of a single continuous wordline (column 3, lines 57-60); and a plurality of channels (e.g., node 150 in figure 2A) connecting the plurality of strapping layers to the wordline.

Regarding claim 6, Cowles also teaches that the strapping line comprises metal (column 4, first paragraph).

Regarding claim 7, Cowles also teaches the strapping line metal comprises a refractory metal (column 4, first paragraph).

Regarding claims 19-25, 30-36, 37-41, 45-48 and 49-54, since the claims recite similar limitations as in claims 5-7, they are rejected on the same ground.

Response to Arguments

5. Applicant's arguments filed 07-26-04 have been fully considered but they are not persuasive. In the Remarks, the Applicant contends that the memory bank 100 as taught by Cowles is different from a single array as claimed in the instant invention. Also, the Applicant cites a passage at column 1, lines 57-64 of Cowles to an example.

In response, the Examiner would like to point out that in the semiconductor memory art, a memory bank is the same as a memory array in term of structure and

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arrangement. A bank or an array comprises memory cells, and may comprise sub-arrays or blocks or sectors. There is no distinction between a bank and an array.

Therefore, in a broad interpretation, the instant invention is anticipated by Cowles and unpatentable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son L. Mai whose telephone number is 571-272-1786. The examiner can normally be reached on 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



10-15-04

Son L. Mai
Primary Examiner
Art Unit 2818